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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,739	03/04/2004	Kenji Matsumoto	2830-0155P	5298

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EXAMINER	
BERTHEAUD, PETER JOHN	
ART UNIT	PAPER NUMBER
3746	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/05/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/05/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/791,739	MATSUMOTO ET AL.	
	Examiner	Art Unit	
	Peter J. Bertheaud	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *13-17* is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/4/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3-6, 9, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Wagenen 3,823,557 in view of Kimura 5,562,425.

Van Wagenen (see Figs. 2 ad 14) discloses a fluid motor comprising a casing 12; a rotor 37; a working part 34 provided at the rotor; and a rotary valve 6 (combination of 14', 16', 18', 20') provided between the casing and the rotor and switching a supply passage and a discharge passage of a working medium for the working part (see abstract), in which the rotary valve 6 is constructed by making a movable side valve plate 16' provided at the rotor, and a fixed side valve plate 14' supported to float at a valve body portion non-rotatably fixed to the casing (see col. 10, lines 13-18), abut to each other on a slide surface orthogonal to an axis, wherein a pressure chamber 204 into which the working medium is introduced from a passage at a high pressure side out of the supply passage and the discharge passage of the working medium is opened to a mating surface of the valve body portion with the fixed side valve plate (see col. 11, lines 60-68, and col. 12, lines 1-40), and the fixed side valve plate 14' is pressed toward the slide surface (110 of 16') with pressure of the working medium acting on the

pressure chamber 204. However, Van Wagenen does not teach the following claimed limitations taught by Kimura.

Kimura (see Figs. 1 and 8) teaches a piston type compressor comprising a casing 2, 3; a rotor 7 rotatably supported at the casing; a working part 17 provided at the rotor; and a rotary valve (see valve assembly within 3) provided between the casing 3 and the rotor 7 and a supply passage for the working medium for the working part 17, in which the rotary valve 11, 21 is constructed by making a movable side valve plate 21, and a fixed side valve plate 11 supported to float at a valve body portion non-rotatably fixed to the casing, abut to each other on a slide surface 21c orthogonal to an axis (see configuration in Fig. 8), wherein a pressure chamber 20 into which the working medium is introduced from a passage at a high pressure side out of the supply passage 3b, 3c, leakage of the working medium from the pressure chamber 20 to a mating surface 21b is sealed by a seal member 27 housed in this pressure chamber 20; (refer to Figure 8) and the fixed side valve plate 11 and the movable side valve plate 21 are brought into close contact with each other on the slide surface 21c with pressure of the working medium acting on the pressure chamber 20 (see col. 7, lines 23-31), wherein a seal ring 55 for receiving the pressure of the working medium is provided on an outer periphery surface of the seal member 21 (see Fig. 8), and a space between an inner periphery surface of the pressure chamber and the outer periphery surface of the seal member 21 is sealed by the seal ring 55 (see configuration in Fig 8). Kimura further teaches a resilient biasing means 32 for biasing the seal member 21 towards the mating surface 21c (see col. 10, lines 2-8). Kimura also teaches that the seal ring 55 is constructed by

a material would be resistant in some degree to oxidized scale. Kimura also teaches that a passage at a low temperature side out or the high pressure side out, of what would be the supply and discharge passage 3b of the working medium, is provided in a center of the valve body portion, and an annular pressure chamber 20 is formed to surround a periphery of the passage at the low temperature side or high pressure side (see extension of passage 3b's wall into chamber 20 and the annular chamber that is created). Kimura further teaches that the contact pressure of the slide surface 21c is set in accordance with a ratio of an area, in which pressure of the pressure chamber 20 acts on the mating surface 21b, to an area of the slide surface 21c (see Fig. 1 and col. 7, lines 23-31).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the compressor of Van Wagenen, by implementing the rotary valve assembly of Kimura in order to maintain high volumetric efficiency (Kimura, col. 2, lines 41-43).

In reference to claim 4, Van Wagenen in view of Kimura discloses the claimed invention except for the biasing means being a tapered coil spring. It would have been an obvious matter of design choice to change the shape of the standard coil spring shown in the prior art since such a modification would have involved a mere change in the shape of a component. A change in shape is generally recognized as being within the level of ordinary skill in the art. *In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966)* (see MPEP 2144.04 – IV B. Changes in Shape).

3. Claims 2, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Wagenen 3,823,557 in view of Kimura 5,562,425 and in further view of Payne 2,378,095.

Van Wagenen in view of Kimura discloses the invention as discussed above. However, Van Wagenen in view of Kimura does not disclose the following claimed limitations taught by Payne.

Payne teaches a fluid seal comprising a seal member 4, 20, a fixed plate 8, 22, and a biasing means 12, 25. Payne further teaches the seal member has a seal lip 10, 21 capable of elastically deforming by softening due to pressure and heat of a working medium (see col. 1, line 47). Payne also teaches that the seal member 4 has a first seal lip 10 for sealing a space from the mating surface of the fixed plate 8, and a second seal lip 9 for sealing a space from an inner periphery surface of what would be the pressure chamber (see Fig. 1). Payne further teaches that the seal member 20 has a first seal lip 21 for sealing a space from the mating surface of the fixed plate 22, and a second seal lip (see rounded inner lip in Fig. 3) for sealing a space from an outer periphery surface of what would be a working medium pipe 6 inserted into a would be pressure chamber.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the compressor of Van Wagenen in view of Kimura, by implementing a seal with multiple lips in order to seal various surfaces (Payne, col. 2, lines 24-31).

4. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Van Wagenen 3,823,557 in view of Kimura 5,562,425 and in further view of Eckerle 3,312,476.

Van Wagenen in view of Kimura discloses the invention as discussed above. However, Van Wagenen in view of Kimura does not disclose the following claimed limitations taught by Eckerle.

Eckerle (Fig. 5) teaches a slide ring seal comprising a slide ring 25 used in a sealing arrangement. Eckerle further teaches that the slide ring 25 is constructed of ceramics (see col. 1, lines 31-34).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the compressor of Van Wagenen in Kimura, by making the seal ring out of ceramics in order to have a rigid element for sealing without requiring costly finishing operation to protect it (Eckerle, col. 1, lines 31-34).

Allowable Subject Matter

5. Claims 13-17 are allowed.

Conclusion

6. The prior art made of record, noted in the attached form 892, and not relied upon is considered pertinent to applicant's disclosure.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J. Bertheaud whose telephone number is (571) 272-3476. The examiner can normally be reached on M-F 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Stashick can be reached on (571) 272-4561. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PJB 3/27/07

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